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ABSTRACT

The effects of physical attractiveness, warmth, and sex of an adult model on imitation behavior of adult males and females were investigated. Subjects were randomly paired with confederates of low or high facial attractiveness who interacted with the subject in a cold-unfriendly or warm-friendly manner. The imitation task involved the confederate lighting a specified colored light on the subject's panel in response to a noun. The subject then indicated his color choice on the confederate's panel. The summed score for 20 trials of match or mismatch was used as the measure of imitation. Results indicated that physical attractiveness influences imitation when combined with other variables, but when compared with a salient, interpersonal attraction variable such as warmth, the effects of physical attractiveness are greatly reduced. The data suggests that the effects of physical attractiveness may be substantially altered when subjects have an opportunity to interact with persons of differential attractiveness; thus, one needs to exercise caution in making inferences from the literature on physical attractiveness. (Author/PC)

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Running Title - Model Attractiveness and Imitation

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PHYSICAL AND INTERPERSONAL ATTRACTIVENESS OF THE MODEL AND IMITATION IN ADULTS

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The recent emergence of physical attractiveness as an important variable in social psychological research has prompted a proliferation of studies concerned with its effects on social interaction. Berscheid and Walster (1973), in their review of the physical attractiveness literature, concluded that physical attractiveness is an important variable affecting social perception and social interaction. Berscheid and Walster reported that physical attractiveness influences ratings of occupational rank, probability of marital happiness, and attribution of personality, status, and intelligence. Miller (1970b) found that physically attractive individuals were more often perceived to be in control of their fate and thus, more inner than outer directed. The evidence seems to support the notion of a physical attractiveness stereotype with physically attractive individuals being perceived as possessing more of the sought after traits. However, Berscheid and Walster (1973) note the limitations of physical attractiveness as an independent variable in social psychological research, and suggest that physical attractiveness may have its greatest impact in first impression situations.

If the effects of physical attractiveness are as pervasive as the literature suggests, then imitation learning (modeling) also should be affected by the model's physical attractiveness since imitation learning is facilitated by attraction to the model (Bandura, 1969; Flanders, 1968).

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Since individuals perceive the physically attractive as more competent because of the traits attributed to them, then the individual may find this model to be more attractive. Bandura (1969) has demonstrated that status and rewardingness of the model influence imitation, and Berscheid and Walster (1973) have suggested that physically attractive persons are perceived as having greater status and being more capable of giving others rewards. Thus, high physically attractive models as compared to low physically attractive models should be liked and imitated to a greater extent. In a study, by Baron (1970) where attraction toward the model (based on similarity between the model and subject) and competence of the model were varied, an interaction occurred between the two traits. Attraction toward the model enhanced imitation, but only when the model also was competent in the experimental task.

Other variables such as warmth are also important determinants of imitation. Certain models are more influential than others, according to Bandura (1969), because the model commands more rapt attention from the observer. Warmth and physical attractiveness of the model should increase the observer's attention since the observer finds this model to be attractive. Furthermore, Berkowitz (1972) has suggested that liking for a person increases his influence to the extent that this person's views are accepted as correct, which results in the observer patterning his behavior after the model's behavior. Thus, if one is attracted to a model, the model's views are generally liked and accepted, which should result in imitation of the model.

The presence of both warmth and physical attractiveness in a model may differentially affect imitation. Bandura, Ross, and Ross(1963)

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found that models who possessed power elicited more imitation than rewarding models. As noted previously, Baron(1970) reported that attraction toward the model increased imitation when the model also was competent. In other studies (e.g., Byrne, London, & Reeves, 1968; Insko, Thompson, & Layton, 1971) attitude similarity has emerged as a more influential determinant of college students' liking for a stranger than physical attractiveness. However, opposite findings have been reported where individuals have an opportunity for extensive interaction. Physical attractiveness was the major determinant of a subject's liking for his date in a simulated computer matched dating study by Walster, Aronson, Abrahams, and Rottmann (1966). Both attitude similarity and physical attractiveness of the date were important determinants of attraction in the Byrne, Ervin and Lamberth (1970) study. When all factors are considered, it seems reasonable to assume that physical attractiveness should be a more immediate determinant of imitation because it is more quickly perceived.

Sex of the model and observer also are potential factors influencing imitation, particularly when attractiveness of the model is varied. Although Flanders (1968) reported no consistent effects on imitation due to differences in sex of the model or sex of the observer, boys were found to be more imitative of an aggressive model, perhaps because this model was more attractive since he displayed sex appropriate behavior. Sex of the model and observer may be influential factors when physical attractiveness of the model is varied, according to Berscheid and Walster's review (1973). For example, males may display significantly greater amounts of imitation of highly attractive females in comparison to lesser attractive female models, while females

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might show greater imitation of highly physically attractive males over less attractive male models.

The effects of physical attractiveness, warmth, and sex of an adult model on imitation behavior of adult males and females were investigated in the present study. On the basis of the previous discussion it was predicted that: (1) imitation is more frequent when the model is physically attractive rather than physically unattractive, and when the model appears warm rather than physically unattractive, and when the model appears warm rather than cold; (2) subjects rate models who are physically attractive or warm as more pleasant than those who are physically unattractive or cold.

Method

Subjects

The subjects were 112 college students (56 males and 56 females) enrolled in an introductory psychology course. The mean age of the subjects, who were white, was 18.6 years. Each subject was randomly paired with a male or female confederate (a college student, $\bar{X}$ age - 19 years), of low or high facial attractiveness who interacted with subject in a cold-unfriendly or warm-friendly manner, in a 2 x 2 x 2 x 2 factorial design with seven subjects per cell.

Confederates

A high and low attractive male and high and low attractive female served as confederates and were the models in the study. The confederates were chosen from a group of five males and five females originally selected by one of the experimenters as varying in their degree of facial attractiveness. Facial ratings have been used as

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the measure of physical attractiveness in most studies. (In this study body size and shape were held constant while facial attractiveness was varied, i.e., both the females as well as the males had approximately the same body-type but differed in facial attractiveness.) Pictures of these students were taken and subsequently rated on facial attractiveness by 10 college students using a seven point scale ranging from 1-extremely attractive to 7- extremely unattractive. (The raters were instructed to assume that facial attractiveness was normally distributed.) The two students selected as the facially unattractive confederates were given an average rating of 2 on the scale while the two students labeled as facially attractive confederates received an average rating of 6. None of the confederates were aware that they had been selected as experimental confederates on the basis of facial beauty.

Imitation Task

A Crutchfield type apparatus employing two lighted panels--a smaller panel for the confederate and large panel for the subject--was used to assess imitation. The confederate's panel consisted of a series of red push-button switches which controlled a configuration of colored lights on the subject's panel. By pressing selected buttons the confederate could produce various color configurations. The subject's panel also contained a set of red push-button switches which controlled the same configuration of lights on the confederate's panel.

The imitation task consisted of the confederate lighting a specified colored light on the subject's panel in response to a noun, voiced on a tape recorder, for each of 20 trials. The subject then indicated his color choice to the noun by lighting a colored light on the confederate's

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panel. The confederate scored each subject's response as a 0 (mismatch) or 1 (match). The summed score for the 20 trials was used as the measure of imitation.

Procedure

Each subject reported to a small room where he or she was joined by another male or female confederate. The student-confederate was introduced to the subject as another student who had volunteered for the study. Both subjects were informed that a short delay would be necessary because the room to be used for the study was not available. During this waiting period of five minutes the confederate interacted with the subject either in a very friendly, supportive, and nurturant manner depicting warmth, or in an unfriendly, distant, and detached manner, indicating coldness. The confederates previously had rehearsed this nurturance manipulation to insure that the interaction was delivered in a similar manner by the four confederates.

At the end of the five minute period, the experimenter reappeared and conducted the subjects to the experimental room containing a one-way mirror. The subject was seated at a large electrical panel box with his back to the mirror and the confederate assumed his position behind a shield-type partition so that only the confederate's face was visible to the subject.

The experimenter then instructed the subjects that they would be involved in a task which incorporated auditory and visual stimuli. The subject and the confederate then were shown how to operate the apparatus. The confederate, seated at the small panel, was asked to push each of the colored buttons on his panel which activated the colored lights on the subject's panel. The subject was told that the lights matched the color of the button pressed by the other person(i.e., the confederate).

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The subject was instructed to press each of the buttons on his board, one at a time, but to wait until the light above the button shut off before pressing the next button. The confederate seated at the small panel box was further instructed that he had to turn off the subject's light each time by pressing the button labeled "reset". The subjects were permitted a short rehearsal period to insure that they understood the operation of their panels.

The subjects received the following additional instructions. "You will hear 20 nouns presented by this tape recorder, one noun each 10 seconds. After hearing each noun the person at the small panel box (i.e., the confederate) should press one of the colored buttons that he/she thinks is the appropriate color response to that noun. When the person at the large electrical panel (i.e., the subject) sees the light on his panel, he should respond by pressing one of the buttons controlling a light which he/she thinks is the correct response. You are not to talk to each other during this time. Do you understand the task?"

Upon ascertaining that the instructions were understood, the subjects were instructed upon completion of the task to answer a questionnaire which was in an envelope placed next to them. They were told to return the completed questionnaire to the envelope, and remain in the room until the experimenter returned. The experimenter then turned on the tape recorder and left the room.

When the last trial was completed, the subject responded to the questionnaire, while the confederate only pretended to do so. The questionnaire asked the subject to rate the student-confederate's global personality using a ten point scale ranging from 0- extremely

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unpleasant to 10-extremely pleasant.

The experimenter, who during the imitation task was stationed behind the one-way mirror in another room, returned to the experimental room after the subject had replaced his completed questionnaire in the envelope. Before termination of the experiment and debriefing, the subjects were questioned about the experiment, its purpose and rationale, and their ideas about the confederate and his participation, in an attempt to assess demand characteristics. This procedure resulted in two subjects being deleted from the analysis because they appeared aware of the study.

Dependent Measures

Two dependent measures were used. The imitation measure consisted of the summed score of the subject's matching responses on the 20 stimulus word trials. The rating of the confederate's pleasantness was obtained from the 10 point rating scale.

Results

The imitation scores and subjects' rating of the confederate's personality were analyzed with separate univariate analyses of variance. The results of these analyses are reported in two sections.

Imitation Measure

The prediction that subjects would show more imitation following exposure to physically attractive than physically unattractive models was not confirmed. Imitation responses were not significantly greater ($F < 1$) when the confederates were high in physical attractiveness ($\bar{X} = 6.57$) as compared to when they were low in physical attractiveness ($\bar{X} = 5.95$). But, subjects displayed greater imitation ($F = 57.10$, $df = 1, 96$, $p < .01$) when the confederates were warm ($\bar{X} = 8.66$) rather than cold ($\bar{X} = 3.86$), supporting the differential prediction regarding warmth of the model. Neither

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sex of the confederate ($F = 3.76$, $df = 1, 96$, $p < .10$) nor sex of the subject ($F < 1$) significantly influenced imitation. However, sex, physical attractiveness and warmth of the confederate were interacting factors.

Higher order interactions. The Sex of Confederate x Level of Attractiveness x Level of Nurturance (warmt) interaction ($F = 5.44$, $df = 1, 96$, $p < .05$) is plotted in Figure 1.

Insert Figure 1 about here

Simple effects analyses indicated that subjects gave more imitation responses to the male confederate than the female confederate when the confederates were physically attractive and cold ($F = 11.38$, $df = 1, 96$, $p < .01$), but when the confederate was warm, subjects were more imitative of the physically attractive female than the physically attractive male ($F = 4.82$, $df = 1, 96$, $p < .05$). Imitation tended to be more extensive for the physically unattractive male confederate than the physically unattractive female confederate when they were cold and distant ($F = 3.26$, $df = 1, 96$, $p < .10$), whereas the sex differences were minimal when both were warm and friendly ($F < 1$).

Rating of the Confederate's Pleasantness

Physical attractiveness ($F = 12.77$, $df = 1, 96$, $p < .01$) and warmth ($F = 114.90$, $df = 1, 96$, $p < .01$) influenced the personality (i.e., friendliness) rating given to the confederate, supporting the predictions which were made. Subjects rated the highly physically attractive confederate more positive ($\bar{X} = 7.12$) than confederates low in physical attractiveness ($\bar{X} = 6.41$). The confederate who was warm and friendly during the interaction prior to the experiment was rated as more pleasant ($\bar{X} = 7.84$) than the cold,

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unfriendly confederate ($\bar{X}$ = 5.70). But these effects were influenced by sex of subject.

Higher order interactions. Figure 2 shows the significant interaction between attractiveness and warmth of the confederate and sex of the subject ($F = 6.26$, $df = 1, 96$, $p < .05$).

Insert Figure 2 about here

Sex of subject and attractiveness of the confederate affected the pleasantness ratings given the confederate who was cold ($F = 7.19$, $df = 1, 96$, $p < .01$) but not the confederate who was warm ($F < 1$). Males gave higher ratings to the high attractive, cold confederate ($F = 10.40$, $df = 1, 96$, $p < .01$), whereas the ratings given by female subjects were not significantly different as a function of the physical attractiveness and warmth and friendliness of the confederate ($F < 1$). When the confederate was cold, a comparison of differences between male and female subjects on the ratings assigned to the confederate revealed that : males, as compared to females, assigned a higher rating to the physically attractive confederate who was cold ($F = 3.90$, $df = 1, 96$, $p < .06$), but the sexes did not differ in pleasantness ratings for the low attractive confederate. The pervasive effect of warmth on personality ratings was evident when warm confederates were compared with cold confederates. Male subjects gave higher ratings to the confederate who was warm regardless of whether the confederate was physically attractive ($F = 18.29$, $df = 1, 96$, $p < .01$) or unattractive ($F = 34.54$, $df = 1, 96$, $p < .01$). The confederate ratings given by female subjects were similar.

Discussion

Warmth of the confederate was the major determinant of imitation and the pleasantness rating assigned to the confederate, although sex of the

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confederate and subject as well as physical attractiveness were interaction factors. In general, the interpersonal attraction variable (i.e., warmth) appeared to be more influential than physical attractiveness in determining interpersonal behavior. Similar findings previously have been reported by Byrne, London and Reeves (1968), Sigall and Aronson (1969), and Stroebe, Insko, and Thompson (1971).

The results of this study are congruent with the reciprocity of liking principle. The confederate's expression of friendliness and warmth may have been interpreted by the subject as liking for him and the subject therefore reciprocated in this liking. Warmth and friendliness are traits which college students value in highly likeable persons (Anderson, 1968), and thus possession of these traits should increase the probability that this person would be liked. Further, Berkowitz (1972) has suggested that attraction toward another resulting from reciprocal liking increases the other's ability to influence. This type of influential effect may account for the increased imitation of the warm and friendly (i.e., liked) confederate in the present study.

The facilitating effect of warmth of the model on imitation has been previously reported in several studies with children (Bandura, 1969; Flanders, 1968). Thus, the positive effect of warmth of the model on imitation in adults suggests that warmth is an important determinant of imitation in adults. This finding extends the generalization of the warmth-imitation relationship to a larger segment of the developmental span.

The effect of physical attractiveness on imitation and ratings of

the confederate's pleasantness appeared to be mediated either by sex of the confederate or the sex of the subject. This effect on imitation was suggestive of a sex stereotype, in that males are perceived as strong, instrumental, and minimally emotional while females are expected to be expressive and warm. This cultural expectation may explain why subjects were more imitative of a male who was physically attractive and cold than the female confederate who was physically attractive and cold, whereas the converse was true when the confederate was warm. The sex specificity of the physical attractiveness-imitation effect can also be interpreted in terms of liking. The subjects may have liked the cold high attractive male confederate and the warm attractive female confederate more because of the social perception that the subject held. However, other data in the study suggest that male subjects placed a higher value on attractiveness. Males gave higher pleasantness or liking ratings than females to the cold, high attractive as compared to the low attractive confederate, while the ratings of female subjects were not significantly different. Female subjects tended to be more influenced by warmth than attractiveness. The physical attractiveness stereotype apparently differs for male and female stimulus persons as suggested by Miller (1970a) and Berscheid and Walster (1973). But, contrary to Miller (1970a) sex of the perceiver was a factor when the confederate was high attractive rather than low attractive. As physical attractiveness decreased, this sex difference disappeared and warmth of the confederate became the important factor. Physically attractive subjects may have been more attracted to the physically attractive confederate, while less attractive subjects may have been drawn to their counterparts. However, one can only speculate on the meaning of these relations since the level of physical

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attractiveness of the subjects awas not assessed.

In summary, the data indicate that physical attractiveness influences imitation when combined with other variables. But, when compared with a salient interpersonal attraction variable, such as warmth, the effects of physical attractiveness are greately reduced. LaVoie and Adams (1973) found a similar relationship for elementary school teachers when physical attractiveness of the student was pitted against conduct, another variable likely to have a strong impact on interpersonal attraction. Much of the research on the effects of physical attractiveness on personality impressions and interpersonal behavior has been gathered by using pictures of individuals and having subjects rate them. The present data suggest that the effects of physical attractiveness may be substantially altered when subjects have an opportunity to interact with persons of differential attractiveness. Thus, one needs to exercise caution in making inferences from the physical attractiveness literature.

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Footnotes

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Figure Captions

Fig. 1 Mean number of imitation responses as a function of sex, physical attractiveness, and warmth of the confederate

Fig. 2. Subject's rating of the confederate's personality as a function of physical attractiveness, and warmth of the confederate and sex of the subject.

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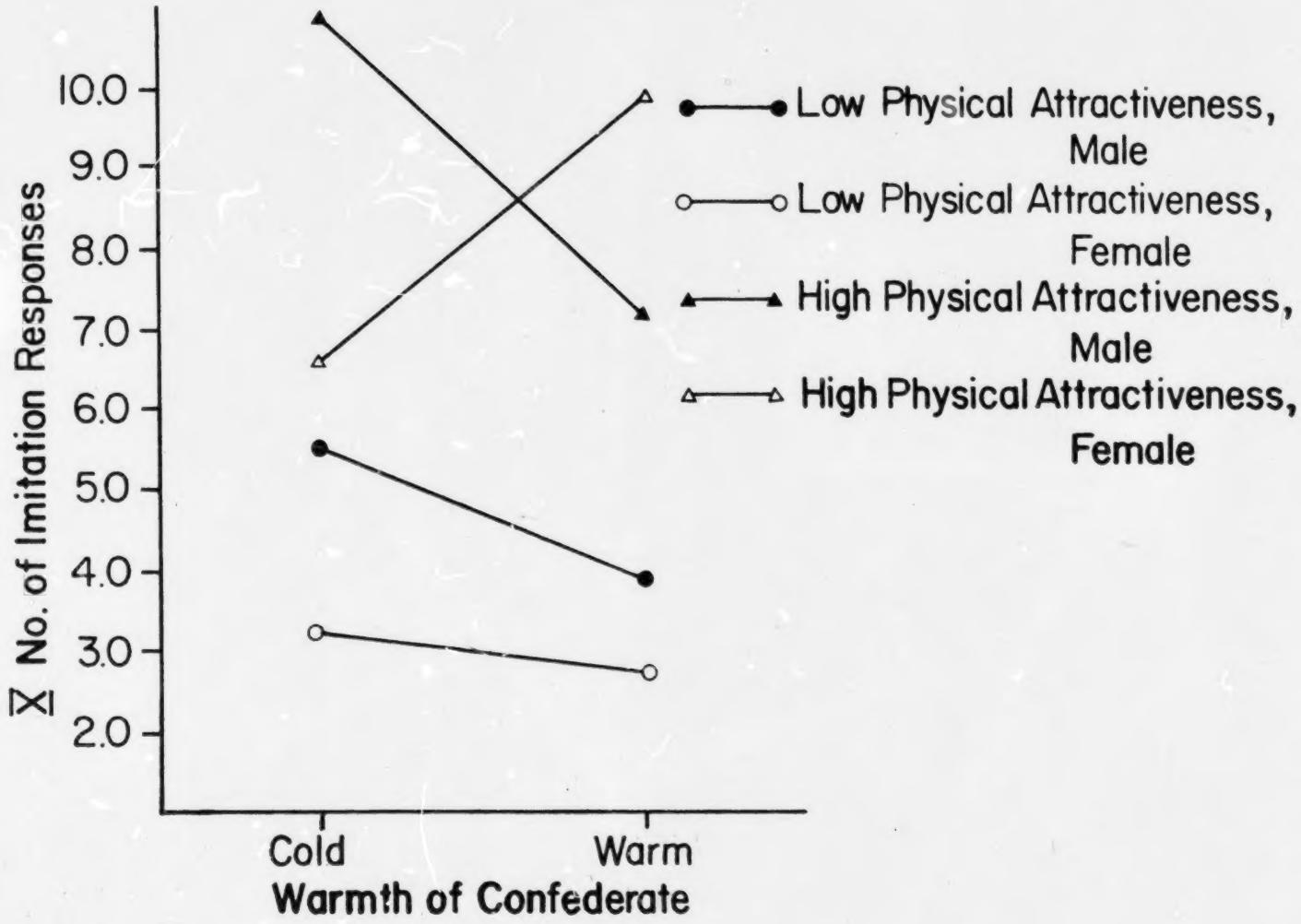

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